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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,619	09/05/2003	Yoshio Awakura	114GI-135A	8011
7590	06/24/2004		EXAMINER DINH, TUAN T	
Bradley N. Ruben, PC Suite 5A 463 First Street Hoboken, NJ 07030			ART UNIT 2827	PAPER NUMBER

DATE MAILED: 06/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/656,619

Applicant(s)

AWAKURA ET AL.

Examiner

Tuan T Dinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-19, 23, 24 and 26-39 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-7, 19, 23, 24, 26-28 and 31 is/are rejected.
- 7) ☒ Claim(s) 8-18, 29, 30 and 32-39 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06/16/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claims 3, 20-22, and 25 are canceled in Preliminary Amendment filed on May 17, 2004.

Claim Objections

1. Claim 19 is objected to because of the following informalities:

Claim 19, lines 6-7, "said conductor pattern" should be –said conductor patterns—for proper antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2, 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al. (5,835,313).

Regarding claim 1, Sato et al. discloses a wiring board, see figure 1, comprising:

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an insulative base made by polyimide material (claims 4-5), see column 5, lines 58-59;

conductor patterns (coils 12) formed thereon;

magnetic thin films (15) produced by at least one of sputtering and vapor deposition (claim 6), see column 6, lines 39-41, formed on at least one of said conductor patterns (12); and

said magnetic thin films (15) being formed with an insulation layer (14), see column 6, line 37, interposed therebetween, that covers the entirety of the surface of said wiring board on which said conductor patterns (12) are formed.

As to claim 2, Sato et al discloses said magnetic films (15) formed on said conductor patterns (12) along outer surfaces of said conductor patterns, see figure 1.

As to claims 19, 28, Sato et al. discloses a wiring board as shown in figure 1 comprising:

a board of at least one layer (11) or at least three layers (7, 10-11), claim 28, comprising a conductor part, said conductor part comprising signal line conductor patterns (12) and magnetic thin films (15) deployed at least one part of said board or said conductor part, and being deployed with an insulation layer (14) interposed therebetween so as to cover said conductor patterns (12).

As to claims 23-24, and 26, Sato et al. discloses said magnetic thin film (15) in figure 1 formed on said patterns (12) and separated from said patterns in portions where said patterns are not formed (because the insulation layer 14 is interposed between the magnetic film and the conductor patterns), and said magnetic thin film is

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fabricated by at least one method of sputtering and vapor deposition, see column 6, lines 39-41.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. ('313) in view of Sato et al (U.S. Patent 5,738,931).

Sato ('313) does not disclose the thickness of the magnetic film within a range of 0.3-20um. However, Sato ('931) shows in figure 10 that a magnetic film (69) having a thickness is 2.0um.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the thickness of a magnetic film within a range of 0.3-20um in the wiring board of Sato ('313), as taught by Sato ('931), in order to reduce a size of thickness for the wiring board.

6. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato ('313) in view of Watanabe (U.S. Patent 5,959,813).

Sato discloses all of the limitations of the claimed invention, except for a magnetic loss material exhibiting a DC electrical resistivity having a value larger than 500 micro-Ohm.cm.

Watanabe shows a combination of a read/write thin film magnetic head having soft magnetic alloy having a resistivity larger than 500 micro-Ohm.cm, see column 7, lines 3-12.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a magnetic material having a resistivity larger than 500 micro-Ohm.cm in the wiring board of Sato, as taught by Watanabe, for the purpose of decreasing an eddy current loss in high frequency.

Allowable Subject Matter

7. Claims 8-18, 29-30, and 32-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 8, 16, 29 and 32 are allowable because the references do not disclose or render obvious in combination of the wiring board having a magnetic thin film configured of a magnetic loss material is a broad-band magnetic loss material in which maximum value μ'' "max of loss factor μ'' " that is imaginary component in complex permeability of said magnetic loss material exists within a frequency range of 100 MHz to 10 GHz, and a relative bandwidth bwr is not smaller than 150% and not greater than 200% where the relative bandwidth bwr is obtained by extracting a frequency bandwidth between two

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frequencies at which the value of μ is 50% of the maximum μ_{max} and normalizing the frequency bandwidth at the center frequency thereof.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kanai et al., Koshikawa, and Yamamoto et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 571-272-1929. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan Dinh
June 16, 2004.

David A. Zarnke
David A. Zarnke
Primary Examiner
6/22/04